SIXPENCE

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# AMATEUR RADIO

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## POWER AND REALISM

(From an article by G. E. Morison, A.M.I.E.E.)

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In these days when much more use than formerly is 'being' made of reproduced sound in mass listening in factories, canteens, theatres etc., the equipment has been installed judging by results without considering what power is required to meet the conditions.

It is the purpose of this article to offer a guide to the estimation of power requirements for any conditions, starting from first principles. The formula which has previously used was:-

$$I = \frac{WT}{11.4V} \quad \ldots\ldots\ldots(1)$$

This states that if a sound is radiated continuously in an enclosure until the steady state has been reached, then the sound intensity I is proportional to the watts W radiated and to T the reverberation time in seconds and inversely proportional to V the enclosure volume in cubic feet. The same formula appears elsewhere in other forms; for instance T may be eliminated by substituting for it the right hand side of:-

$$T = \frac{0.05\ V}{Sa} \quad \ldots\ldots\ldots(2)$$

This is the original sabine formula for reverberation time T which defines the time in seconds required for a sound of normal intensity level 60 db above the threshold of audibility to die away to 0 db in a reverberant room, the sound source having been cut off. S is the total interior surface of the enclosure and 'a' the average absorption coefficient of all surfaces. From this an expression can be derived for W in terms of I, the dimensions of the enclosure and the factor 'a'. All formulae of this type, however, are open to suspicion in that they rely too much on an illusory steady state, which can be produced, but is not what we are dealing with in ordinary listening.

When sound is radiated in an enclosure there is a period from the moment radiation begins to that time when the steady

state may be said to be reached, during which the intensity is increasing exponentially. To find the true intensity at any point in the enclosure we would require to add the direct radiation from the source and to know the particular manner of this direct radiation. The period required for the sound intensity to approach its maximum may be called the building up time and may be quite long, as much as 1 second in a reverberant enclosure having T - 6 sec. For a more absorbent enclosure with t - 1 sec. the building up time is still considerable being 0.2 sec. There are the times required for the intensity to reach 0.9 of its maximum, this being, to the ear, indistinguishable from maximum intensity.

Now, in listening to speech or music we appreciate the whole by hearing, in proper form, intensity and sequence, the successive sounds which make up syllables or musical sounds, including many of a quite transient nature. It is accepted for instance that the duration of the average syllable in English speech is 0.2 sec and of some consonants only 0.02 sec while the diversity in music is even greater. That being so it is clear that the briefer sounds can never reach the steady state intensity implied in formula (1) unless the enclosure is quite remarkably 'dead', and if it is so then the building up process by reflection, can hardly be said to function with any effective increase of sound level. The use of formula (1) is thus not justified for power calculations and must give results showing less than the true power required for a given intensity.

Listening in the ordinary room there are three primary conditions which impair the validity of any calculation which is made on the assumption of a steady state and spherical radiation. These are :- (1) the individual sounds heard are of short duration (2) the loudspeaker radiation is of the type which fills a limited solid angle, as distinct from uniform spherical radiation (3) the average boundary absorption is such that the energy density in the enclosure is never uniform, the least of all for sounds of short duration. All these factors are such as to make the effective density at a point more nearly equal to that due to direct radiation only than to that due to reflected energy. Formula (1) fails as it exaggerates reflected energy.

There are two physiological factors which reduce the importance of reflected energy. It has been shown that the apparent loudness of direct radiation is greater than that of diffuse many times reflected radiation of the same intensity. Again, in the case of sounds of short duration the ear will accept and add together two wave trains quite considerable displaced in time or phase, but this accommodation extends only to identical sounds which arrive at the ear with a time difference not more than about 1/20 second. Beyond this the ear begins to hear two distinct sounds. Therefore no reflected radiation in a room which arrives with a delay of more than 1/20 second can be accepted as adding

usefully to the sound level. In this time sound travels 56 feet. Taking an average room, say 18 x 14 x 10 the distance between reflections, the mean path, is on average 4 V/S where V is total volumne and S total surface. This is less than the distance between walls because it takes account of short path reflections as at corners. The distance for this room equals about 8 feet so that useful reflections will include all those which happen to reach the listening point, even after seven (56/8) reflections. However those waves which reach the listening point by a roundabout route will be insignificant in their intensity. Yet a little consideration will show that most reflections must belong to this class, as first and even second reflections to a given point can only be very limited.

The complete determination of the precise gain in energy level, due to reflection, at a given point in our average room, is practically beyond calculation if we limit the time to 1/20 second as required, but by using several approximations we find that the energy gain may be between 100 and 200 per cent or 3 to 4.& db above that due to direct radiation at a distance of eight feet. If the listener is nearer the source it is less and conversely.

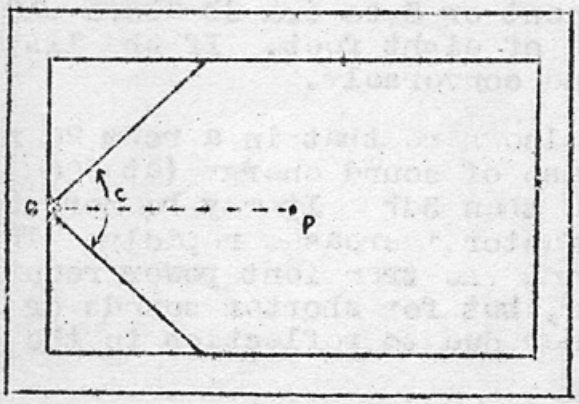
DIRECT RADIATION. It has been shown elsewhere that in a room 20 x 15 x 10 ft. the increase of sound energy (at 500 cycles) due to reflection is not more than 3db It may be more below 200 cycles where the reflection factor increases rapidly. Thus for a given sound level in such a room, the transient power required is 50 percent of that in the open air, but for shorter sounds or higher frequencies the economy of power due to reflection in the room decreases rapidly.

We may conclude that a better starting point for power calculations would be to find what power is required to produce a given sound level at the listening point by direct radiation only. Then the assistance by reflection in a room becomes a small 'factor of safety' which we can accept as good engineering practice. If sufficient power is provided, without counting in reflected power, then we know that if any sound is re-radiated by the loudspeaker however transient it may be and whatever the room boundary absorption, there will be sufficient energy to establish the required sound level at the listening point. This makes reproduction real in the power sense, for in listening to original sound, if it is transient, then the intensity level is that due to direct radiation with no appreciable sound reinforcement by building up of repeated reflections. This is particularly true of orchestral performances which are normally heard in an enclosure where the 'building up' time is appreciable.

POWER CALCULATIONS. Once the idea is accepted that for realism a reproducer must be capable of producing at the listening point the required real sound level directly or (instantaneously" the maximum power required can be calculated if the intensity level relative to $10^{-16}$ watt/cm2 is given in decimels. According to one authority the highest steady intensity level for

an orchestra is about 100 db. To produce this there is required about $10^{-6}$ watt/Cm2. The total acoustic watts is then A x $10^{-6}$ where A is the area across which the power flows at the point chosen. To determine A we need to know the distance from source to listening point and the solid angle which includes all the radiated power. The average domestic receiver placed near a wall and with a back damped cabinet will radiate usefully about 120 degrees. In an average room with the listening point P eight feet from the loud speaker the total acoustic power required for 100 db level at P is about 0.18 watts. The electrical efficiency of small moving coil speakers working in a baffle is about 5%, hence the electrical power to be delivered to the speaker is about 3.6 watts. In order to take care of PEAK levels which are given as 105 db for orchestral music, the undistorted power required becomes 3.162 x 3.6 = 11.4 watts, where 3.162 is the factor for 5 db increase.

So far as home listening is concerned the importance of wide distribution for all frequencies is evident, if sound levels are not to be distorted by concentration. It is also evident that, although the ro om reflection at 500 cycles (0.6 sec) is not an important factor, it may be so at low frequencies where the reverberation time of the same room may be 1.5 sec. This would effect the reflection of power to sound level for sustained low notes. For the practical calculation of power required in watts we need to know only two variables:- the length in centimetres from the speakers to the main listening distance, which we call OP, and the average angle of radiation of the loud speaker used called C .




The general formula is then:-

$$\text{Watts required} = \frac{(OP)^2 \quad 2\pi \quad (1-\cos \frac{c}{2})}{10^6}$$

The following table gives values for $2\pi(1-\cos\frac{c}{2})$

For further simplicity the table has been worked out using another multiplier ($10^7.6$) to convert to linear feet. The required watts (radiated) is then the last column value multiplied by $OP^2$ where OP is measured in feet. Finally to find amplifier output watts divide by $\frac{x}{100}$ when x is speaker efficiency in percent. The power arrived at is that required for a loudness level of 100 phons or 100 db.

| ANGLE C covered by speaker | Constant to be multiplied $OP^2$(ft) |
|---|---|
| 45 degrees | 0.00044 |
| 60 " | 0.00078 |
| 90 " | 0.00170 |
| 120 " | 0.00291 |
| 150 " | 0.00432 |
| 180 " | 0.00583 |

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## MAKE YOUR OWN METER SHUNTS

From an article by Stephen J. Varmecky

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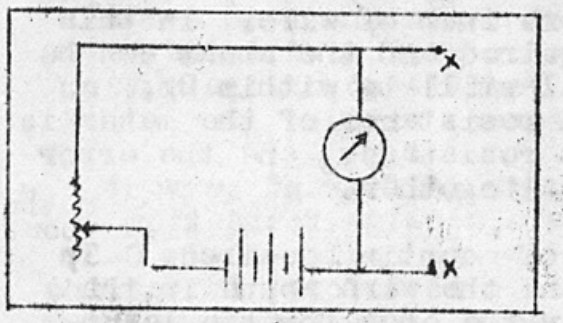
Many amateurs have meters which are limited in use by reason of the limited ranges. This can be rectified by the use of shunts which can be constructed for any meter by the method to be described. With reasonable care they should have better than 1% accuracy.

It is possible to make a set of shunts to be used with any low resistance meter, each shunt having a factor instead of a definite current range. That is, a certain shunt having a factor of 5 when used with an o-1 ma meter would increase the range to 0-5 ma.

The wire used for making these shunts can be any type of resistance wire, the wire from an old rheostat being quite satisfactory. The only equipment necessary is a 45 volt battery and a variable resistor. The minimum size of the variable resistor may be calculated as follows R = voltage of battery x 1000 divided by current for full scale deflection of meter. Thus a 0-1 ma meter used with a 45 volt battery would require a 45,000 ohm resistor. Actually a 50,000 ohm or even a 100,000 ohm resistor would be close enough.

Connect meter, battery and resistor (set at maximum) as in Fig 1. Suppose we have an o-5 ma meter we wish to change to a 0-10 ma meter. First set the meter to read full scale by means of the variable resistor. Connect about 6 inches of the resistance wire across the points marked X and vary the length of the wire until the meter reads half scale. Use heavy wire for leads and be careful of the contacts to resistance wire




As half the total current is now passing through the resistance wire it is obvious that the resistance of the shunt must be equal to the resistance of the meter. Suppose the length of wire found necessary was 1/4 inch. Because of uncertain contact resistances this is too small a shunt resistance to use. In order to minimize the effect of contact resistance it is necessary to put a length of the resistance wire in series with the meter so that the shunt for the highest current range is not less than about 2 inches of wire.

An explanation to this is in order. The current in two parallel resistances will divide inversely as the resistance of each branch. That is, if one resistor has twice the resistance of the other it will carry only half as much of the total currency.

Now, we have found that the meter's resistance is equal to 1/4 in of resistance wire. This is the highest range shunt so we will make it 2 inches long. The resistance in series with the meter should then be 2 in minus the internal resistance of the meter (1/4 in) i.e. a total of $1\frac{3}{4}$ in of resistance wire.

A more common application would be the different current ranges in a set tester as shown. We have a 0-1ma foundation meter with the following ranges marked on the scale:- 0-1; 0-5; 0-25; 0-100; and 0-250 ma. The first step as before, is to find the resistance of the meter. It may require $\frac{7}{8}$ in. of wire the 0-2 50 ma shunt must carry the most current, so we will make it 2 in. long. At full scale deflection, the meter itself will carry only 1 ma and the shunt will carry the other 249 ma. Therefore the meter with its multiplier must have 249 times as much resistance as the shunt i.e. 41 ft $5\frac{1}{8}$ in. of wire on the multiplier. If it were mad e only 41 ft. long the error would still be only about 1%.

The 0-100 ma scale is next. The shunt must carry 99 ma and the meter 1 ma. Since the meter and multiplier have a resistance of 498 inches of wire, the shunt must be 1/99th of this or 5.06 inches long. The 0-25 and 0-5 scales are calculated in a similar manner. A factor which must be considered in the making of all these shunts is the heating effect; the resistance wire must be sufficiently heavy to stop the heating of the shunt.

If very high accuracy is not important, the highest current shunt can be made equivalent to only one inch of wire. In this way only half as much wire will be required and the shunt can be made more compact. Their accuracy will still be within 2%. As you have probably noticed the internal resistance of the meter is only a small part of the total circuit resistance, and the error would be slight if it was disregarded altogether.

The constructor may use any form of mounting desired. In one method, wooden dowel was slotted and the wire wound in the slots with two small holes drilled near the ends for the leads. With another method two pieces of hook-up wire were twisted together, insulation and all, and the resistance wire wound around the twisted part. The ends of the resistance wire are soldered to the ends of the hook-up wire.

If the shunts are to be used with AC, the resistance wire should be doubled before winding on the form in order to make them non-inductive.

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## THE NEON-TUBE PARTS CHECKER

From an article in QST by W1FWH

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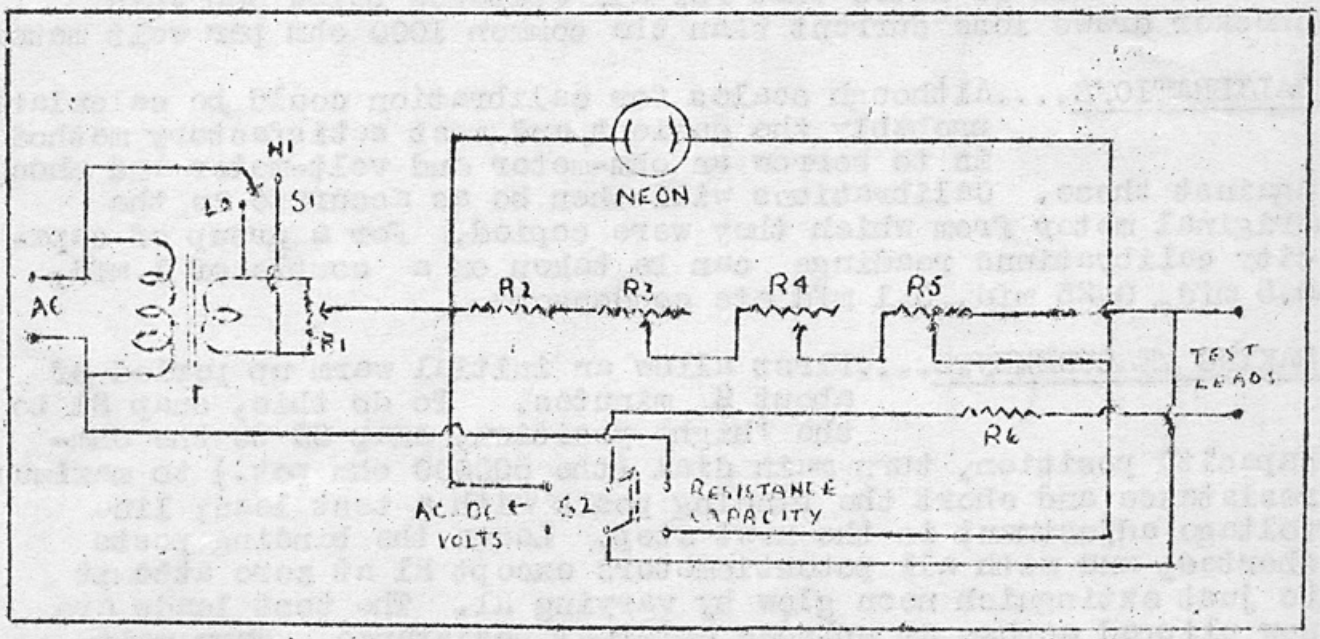
Nowadays things are rather hard to get! and How. In consequence many parts salvaged from old BCL sets etc., come in handy. Frequently, however, it will be found that the markings of many of the resistors, condensers etc. have faded or been rubbed off. A means of measuring such values obviously is needed. Fortunately a checker of simple design can be built round a neon or argon tube.

By making use of the fact that the extinction value of such a tube is constant within reasonably close limits, it is possible to measure voltage, resistance and capacity over a useful range of values. The lamp is shunted across the variable portion of a voltage divider, and under different conditions of use the divider must be adjusted to bring the neon lamp voltage just to extinction point. The values to be checked can be read directly from a calibrated scale associated with the voltage divider.

D.C. volts between 70 and 1500 and A.C. volts between 50 and 800 may be measured fairly accurately. Insulation must of course be adequate. Resistances up to 500,000 ohms and capacities between 0.0025 mfd and 4. mfd may also be measured.

The circuit diagram for this checker is given in below.




R1..300 ohm potentiometer
R2,R6,,2000 ohms 2 watt
R3..5000 ohm potentiometer
R4..50 000 ohm potentiometer
R5..500,000 ohm Potentiometer
S1 SPDT toggle switch
S2..DPDT toggle switch
T..bell ringing transformer.

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CHARACTERISTICS OF NEON LAMPS...The basic principle upon which this device operates is the observation that the extinction potential of practically all 1 watt neon lamps does not vary more than 1½ volts when AC is the power source. With DC the variation can be as high as 4 volts, although with rectified AC (pulsating DC) there seems to be no variation. A 2 watt argon lamp has practically the same characteristics as the 1 watt neon. Because the DC ignition voltage required is at least 62 and the AC required is a minimum of 48, measurements below these figures cannot be made.

The transformer T, together with its associated switch and potentiometer provides a means of adjusting the voltage across the voltage divider, R2 and R6 (including the unknown resistance or capacitive reactance to be measured) to approximately the 96 volts required, regardless of the line voltage. The secondary voltage should equal the difference between 96 volts and the highest voltage encountered an the AC line. This means that, with S1 in the low position R3, R4, and R6 at minimum and the test leads shorted, adjustment of R1 should permit the neon lamp to be extinguished. The terminal to which R6 connects should be marked 'ground'. To ensure that this terminal io on the 'cold' side of the line, reverse the power plug until the neon tube glows when a test lead from the terminal connected to R5 is touched to an actual ground connection.

It should be noted that for all voltages below 500 this checker draws less current than the common 1000 ohm per volt meter.

CALIBRATIONS....Although scales for calibration could be calculated. probably the easiest and most satisfactory method is to borrow an ohm-meter and volt-meter and check against these. Calibrations will then be as accurate as the original meter from which they were copied. For a group of capacity calibrations readings can be taken on a couple of 1 mfd, 0.5 mfd, 0.25 mfd, 0,1 mfd etc condensers.

MAKING MEASUREMENTS....First allow an initial warm up period of about 2 minutes. To do this, snap S1 to the 'high' position, snap S2 to the ohm-capacity position, turn main dial (the 500000 ohm pot.) to maximum resistance and short the binding posts with a test lead; line voltage adjustment is the next step. Leave the binding posts shorted, and with all potentiometers except R1 at zero attempt to just extinguish neon glow by varying R1. The test leads are now clipped across an unknown external resistance. Turn main dial, R5, until the neon glows then slowly back off until it extinguishes. Thae the reading on the ohms scale at this point. Condensers are measured in the same way. Electrolytics of course cannot be measured as power source is AC. The same procedure is followed in making voltage measurements, but S2must, of course be switched to the volts position.

SLOUCH HATS AND FORAGE CAPS
By 2YC

Happy New Year to everybody, where ever you read Amateur Radio, and may tons and tons of notes for 2YC be the New Year Resolution of each and every Ham..ahem..but don't break this resolution Oms.

To start the New Year-- It has been suggested to me from time to time that I'm a bit hard on the Navy, as I've got an Army Cap and an Air Force Cap on top of the column, but not a bit of space for the Navy, even when they provide (vide 4RF) most of my notes Well, you see I can't work out a heading with Navy Caps in it... But come on you lads in Navy Blue...what can you think of...Send ideas into FHQ, your Divisional HQ or to myself.

As 3TR was one of our firstline DX hounds here is an extract out of one of his letters to Bruce Harm 3BM.....

"I have had some great times since leaving home-whew and whato! I also have done a spot of touring at the expense of both Governments, seeing Sicily and this country. Italy is a beautiful place. Here we are in the mountains near the northern parts. When we came in February all was hushed and quiet with snow--beautiful-now it is spring, everything at its best. Hills are a vivid green grass..foot high, and the countless number of wildflowers. We are taken for walks occasionally, therefore see quite alot of the country and its people who are usually very friendly, and are very fed up with things generally. What your Father said about the number of workers per acre is well and truly borne out-even to kids just able to handle a hoe. I am keeping mentally fit by running a radio class of 625 pupils. Starting right from the first electron, etc, no text books here but I have had lots of time to oil up the 'sub-conscious' as it were. I worked for Jerry for 8 months in Tripoli before coming here. Have met many Hams including a D. Have to finish now OM so cheerio, best of luck..SNOW." (Now what kind of a D was her I wonder..2YC-)

Extract of a letter from Charles Stanford who was on many occasions at 3CE, 3NN and 3BM ....."Perhaps I could give you a brief resume of what has happened since I last wrote. Early in October last I was shifted from my old section and sent to make part of a new one being formed. It meant leaving Alex too. I was moved immediately to Cario area and then hurried on up the Western Desert in time to do our bit in the push there in Nov and Dec when we relieved Tobruk and Rommel was pushed back to agedabia. I got into some warm spots. I rather enjoyed myself in spite of being horribly dirty, water was so scarce that we seldom considered even washing our sox. In one rather awkward moment at the culmination of several days successes to Rommel I was able to assist by going places and doing things with a wireless van. We were quite used to being shot at by this time and sort of didn't care what happened to us and in that mood we accomplished several days work that took us through packed hours of exciting experiences. As a result I am wearing a ribbon indicating the award to me ofnthe Military Medal, possibly you heard it over the

air or saw it in the papers. We were out of all that at Xmas time when we commenced a series of moves and waiting which would normally have landed us in a new battle zone, but instead we finished up at home in March. I've had a week at home, of course they were delighted to see us back. By fortunate co-incidence Alex and I, tho' now in separate units came home on the same ship. Quite a good trip, one or two scares. Now we are taking to the old routine of the training camp again. Almost all of our work is signal work--wireless".

From 2AHM who hopes I have not overlooked his TG9BA QSL-comes the following:- "A brief resume of George's-VK5KJ's-doings since hostilities, will not be out of place. On the outbreak He joined the Army, only to be kicked out a few months later on account of his health. The RAAF, unfortunately an examining doctor knew his history, so they wouldn't take himthere....The navy also proved a blank after a long try. In desparation he took his commercial ticket and eventually secured a berth as 2nd op on a freighter. Since then I have received cards at odd intervals from various parts of the world. So far he has told me nothing more exciting than visiting his birth place in GM. Still when he comes back to VK, he should have some experiences to talk of, and he hopes to be back this Xmas. My last hearing of him proved rather a co-incidence, as I had two cards by the same mail:one posted in Monte Video, the other in Edinburgh".

Congrats to Harry White 3IR, he snared a first class ticket last week and has been very busy interviewing photographers especially those dealing in glamour ever since. ..By the way, it was a pity that Harry could not be persuaded to say a few words when he attended a recent VK3 WIA meeting. Harry is well known throughout the "Andrew" as the 7/- a day tourist. His wanderings read more like a C.P.R. Luxury Cruise, or maybe he was following those cable routes one has to cram for the Commercial ticket. Shanghai, singapore, (don't say too much about those two) Glasgow and Dublin, he knowa them all. Then home via Montreal and Los Angeles.

Cap'n Bligh (3UH to you) left us a few weeks ago and to date we have had no buzzers regarding his activities.

George Benwell, 3KQ writesthat he is enjoying the tropical sunshine --rig of the day being Jantzens and sun helmet.

3MV -- has been very quiet of late--no repetition of the run reported by 3IR... Austerity and all that. However during a SHORT visit to one of the better known Melbourne Inns he met a G from Liverpool. They has an FB QSO and the G was to accompany him to the last WIA meeting. Unfortunately 3MV received a crash draft and the night of the meeting found him quite a few miles away. But if the Liverpool lad turned up there is no doubt the boys would have made him more than welcome. Anti-climax--3MV couldn't find his name and call sign when giving this news. He says--sorry and all that--chaps..

(continued on page 14)

# DIVISIONAL NOTES

## FEDERAL HEADQUARTERS

November meeting of the Federal Executive was quite a busy and unique in this respect, that despite of the fact that the ban on transmissions had been in force for over three years, correspondence was received from every division with the exception of VK3. South Australia gave details of the negotitations leading up to the establishment of the ECN in that state. Tasmania forwarded names of VK7's who were desirous of joining the Federal Body. Western Australia forwarded a donation of Three guineas to the P.O.W. VK4 gave details of the position of the Institute in that state. New South Wales brought under the notice of the Federal Executive certain proposals regarding Servicemen and spare parts.

The Chairmans report on the years activities was adopted on the voices and it was decided that it be printed in "Amateur Radio". (It's already been printed..ED )

The main subject for discussion at the December meeting of the Executive was a request submitted by the New South Wales Division that the Federal Headquarters should communicate with both the RSGB and the ARRL in an endeavour to ascertain what steps, if any, had been taken in the respective countries regarding post war Experimental Radio. It was decided that this request be complied with, and in addition a copy of the Chairmans Report be forwarded to the I.A.R.U.

The Federal Executive would, through these pages, like to wish Australian Experimenters everywhere all the best for 1943.

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## EMERGENCY COMMUNICATION NETWORK

The network continues to make progress and recently the Control Station for the "A" network was installed and tested. This station has for its final amplifier a pair of 813's-beam power tubes capable of pumping two hundred watts into the aerial, which in this case is a vertical half wave 140 feet high. With the installation of this station several tests have been carried out with mobile units bringing back memories of WIA Field Days to many of the lads prominent among whom were VK2IO and his brother VK2AIO. The work that these two chaps did with their mobile unit is particularly appreciated by the Technical Committee.

Fixed stations are gradually coming into operation and each week sees another station installed at its permanent location. A word of praise is due to Section Leader Ern Hodgkin 2EH. As members of the network are aware, numerous applications for enrolment were received, but unfortunately locations were not at all decentralised, which meant that more than sufficient operators were available for some installations, whilst in other

casesthe scarcity of operators caused no little worry to the committee . When allotting hams to the various stations two factors decided the issue. Firstly home location, and secondly place of business. 2EH came into the picture in the latter category, but as most amateurs know, once Ern becomes interested in any project he works wholeheartedly for its success, and despite the fact that the amateurs attached to this station were scattered in adjoining districts, under his inspiring leadership VL2JH was the first station to be completed and beam antenna erected. Congratulations to 2EH and his band of fellow workers, who include 2ABI,2AKI and another young fellow who was just too late to get a call sign.

Another couple of lads working under difficulties are Charlie Fryar VK2NP and Jeff Thompson 2XP. 2NP was quite well known in the good old days for his beautiful 'fist',T9 note and his views regarding fone. Well Chas has developed a glass arm these days, but to hear him discuss the merits of this or that type of modulation is worth going a long way to hear. Incidentally, 2NP's station is something to look at and any ham would be proud to own it, Keep up the good work chaps, and when its all over there will be another exhibition and the boys of the ECN will take some beating for the best complete station.

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## NEW SOUTH WALES DIVISION

The December General Meeting of the Division was held at the YMCA Buildings on Thursday 17th December at 8 PM. As usual with the Christmas meeting formal business was very quickly disposed.

The Chairman extended a welcome to our old friend Bill Zech 2ACP, Charlie Luckman 2JT, Ron Hands 2ZD, and the "Bomb Happy Hams" Roger Torrington 2TJ and Jim Haining 2AMQ.

Donations are still coming along for the P.O.W.'s Fund and the NSW total now stands at £14,16.6. To date no member has come forwardwith the name of any ham known to be a Prisioner of War, despite the fact that the list recently released by the Japs contained the names of two hams known to the writer. Remember chaps, it is not necessary for the P.O.W. to be a member of the Institute,in order to receive a parcel. The Institute,unlike the RSGB, is broadminded in its outlook and endeavours to provide comforts for all hams, The benefits of the RSGB scheme is confined to Members only which is a very shortsighted policy and must only cause heartburnings in some cases. Imagine two hams P.O.W.'s, one a member of the society and the other not. It is mail day. One receives a parcel, the other does not. What Happens? The parcel is shared, so why not make it an all in affair.

At the December 1941 General Meeting of the Division it was decided that in view of the critical stage that the country was in, no election of Officers would be held, and that the Council then in Office would function for a further period of twelve

months. Council at its December 1942 meeting decided that the annual election should take place as laid down by the Articles and Memorandum of Association. The Chairman in making this decision known to the General Meeting stated that Councillors were of the opinion that, in view of the large increase of membership during the last six months, members should be given an opportunity of expressing their opinion as to who should be in control of Divisional affairs for the next twelve months.

Remember Jeff Whyte of "Fencinf Wire Beam" fame. Well as you know 2AHM lives way out in the Never Never where men are men and women glad of it. Sometimes it rains at Willow Point, via Wentworth, more often than not it doesn't. Jeff has been toying with the idea of locating water by means of radio and would be pleased if any ham could give him any details of any known methods. Letters should be addressed to R.J.Whyte, VK2AHM, Willow Point via Wentworth, N.S.W.

The President and Council of the Wireless Institute of Australia, New South Wales Division take this opportunity of wishing Members everywhere the Compliments of the Season and hope 1943 will be Victory Year.

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## VICTORIAN DIVISION

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It seems that during the past month members of Council of the Victorian Division have been well in the spotlight. Maybe those members wanted to keep it dark, but here it is...

One Saturday afternoon they met at the Rooms with the intention of painting the masts on top of the building. As one of the masts is still in the vertical position considerable discussion took place as to who was to demonstrate their powers as an Alpine Climber. Eventually Bert Burdekin (of potato fame) complete with pot of paint and brush commenced his upward climb. On reaching the top of the mast he started his job, while the rest of the gang went about their several duties on the masts in the horizontal plane. Ken Ridgeway was suddenly startled by a wet spot which fell from up above. On investigation it was discovered that there had not been any seagulls or other such birds flying overhead at the time, so the conclusion was , that Bert had accidently spilt a little paint whilst he was at the top of the mast. Was Ken Relieved.????.

At the last Morse Code Class prior to closing down before Christmas it appears that Chas Quin 3WQ was unable to control a couple of YL students. Charlie maintains that he remained seated during the proceedings, but somehow that doesn't seem natural to us. However when 3HX sets out to ring up 3WQ, with the intention of saying that he was the YL's Father, WQ comes back with "Yes Tom"..... Well what would you do?? HX had it all worked out that Chas would ring up Ken Ridgeway and warn him that there was trouble in the air. Of course Ken knew all about it.

From 3BM we learn that Bruce has been on constructional work but not radio. Fired with the ambition of handling bulk wheat quickly, he designed and built a unit which, to us, seems to be asgood as anthing that could be commercially manufactured. It consists of a hopper body on a 5 ton truck, holding 270 bushels and has sliding doors at the bottom, emptying into the silo in two minutes. The second unit is a power elevator on a trailer with a power takeoff from the gearbox of the truck, and will put the wheat into the truck as fast as a couple of men can up-end the bags into a low-down hopper. Congrats Bruce.

Say chaps don't forget the next meeting of the Division. Its on Tuesday the second of February..

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From our oldest correspondent-VK4RF at Canberra- we get the following- VK4RY continues to service supers, hang up skywires etc,here at Canberra, VK5FA enjoys the change here after being so long at Darwin, VK4NO kept him company at that QRA, so things could have been worse. 2ANP is a little tired of being continually surrounded with WRANS...(he and 3RJ had better get together,Hi..2YC) wanting to know "How to do this".

VK2ACG continues to keep an eye on about a dozen high-power rigs including a 200 KW outfit, but he leaves the faults to be remied by 2EO, when the developes.(VK2CX,please note whereabouts of 2ACG...his QRA..Belconnen Naval W/T Stn FCT)

W6FTX, W7LQ, W2HFT and W9QCV/W6RBA spend their spare time chewing the rag with 4RF about ham radio after the was, even if it is on 5 metres.

4RF reports himself leading a "quiet" life, but after all he wrote it himself so we'll just say..Oh Yeah..to that bit of news.

And that thanks ever so much chaps, fills up two pages nicely. (Say Jim what happened..Its nearly three...ED). But don't rest on your laurels for the love of Mike. You see they (down at printing HQ--) just squeeze it in a bit whenever it looks like too much. Oh,its a racket, and I only just woke up to it. First they said only a page, Jim,OM.. and they double spaced all the lines and had a big margin and everything was lovely. So I fell for "can you manage two pages, do you think Jim"... and as soon as I fell... away went the big margin,away went the double spaced lines... and now I'm down on my knees begging notes month after month... wouldn't it ?????

So all notes before last week of the month to VK2YC..78 Maloney St. Eastlakes...N.S.W.

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## THE WIRELESS INSTITUTE OF AUSTRALIA

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Meeting Night—First Tuesday in each month.

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The Division meets on the Third Thursday of each month at Y.M.C.A. Buildings, Pitt Street, Sydney, and an invitation is accorded to all Amateurs to be present.

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